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Contributed Articles.

On Important Apian Subjects.

Cellar Wintering with Chaff Hives.

BY G. M. DOOLITTLE.

Not long ago, a bee-keeper called and requested that he be allowed to go into the bee-cellar to see how the bees were wintering in there. Upon looking around and seeing many of the colonies having masses of bees hanging below the combs, similar to a swarm in summer, he was surprised, and seeing that most of the hives in the cellar were chaff-packed, he wished to know if I did not think that the bees were protected too much in these hives. I said "no." He seemed to think that having bees in chaff hives when wintering in the cellar, was very much like a man keeping his overcoat on when in the house, thus inferring that the bees were too warm, and that this was the reason they hung down below the combs so, yet he was compelled to admit that he never saw bees as quiet, when in the cellar, as were these very bees he was looking at. My idea of the matter used to be the same as his, until I began to experiment to find out the truth. After these experiments I am prepared to say that bees will winter better in the cellar if in chaff hives, than they will in single-walled hives, providing they are fixed as they should be in the cellar. The experiments conducted were as follows:

One season, several years ago, I had some quite weak colonies, formed by uniting nuclei late in the fall. They were in chaff hives, as I had intended to winter them out-doors; but after all the rest of the bees were in the cellar, which I had intended to put in, I found that there was considerable room left in the cellar, so I decided to try a part of these small colonies in chaff hives, by putting them in the room left, for I feared they would not go through the winter where they were. Accordingly, I put some six or seven of them in, two of which were placed in the cellar just as they stood out-doors—i. e., the bottom-board, cap, and chaff or sawdust cushion were all carried into the cellar, with no means provided for ventilating the hives, save what air would go in and out at the entrance. Two others were left the same as out-doors, save that the cap or hood was left on the summer stands. The remaining ones were raised from the bottom-board some three or four inches, by way of putting two sticks of ordinary stove-wood between the bottom of the hive and the bottom-board, one on either end of the hive, the cap being left out-doors the same as the last.

That the reader may better understand, I will say the chaff, or fine straw (I prefer the latter), is about four inches thick on all sides of the hive, while over the tops of the frames I use two thicknesses of common cotton-cloth, preferring that these pieces of cotton-cloth be free from propolis, although not all of them are so. Over these pieces of cotton-cloth I used a sawdust cushion, which is nearly as large as the whole top of the hive, this cushion coming out well over the straw on all sides, thus making it impossible for a current of air to pass rapidly through the hive, or for the bees to get above the cotton-cloth out into the tops of the hive, or into the hive above. This sawdust cushion is of about the thickness of the straw at the sides, and being of fine, dry, basswood sawdust, it is capable of absorbing nearly its bulk of moisture before it becomes wet to any appreciable extent.

Now for the result: On putting the bees out in the spring, I found both of those dead which were put into the cellar the same as they would have been had they been left out-doors; one dead and the other weak in condition, of those which had only the entrance of the hive for ventilation, but had the cap left off; while those raised from the bottom-board on sticks of stove-wood were apparently in as good condition as they were when put into the cellar the fall previous. Seeing the success attained by these last, I thereafter commenced to put more colonies which were in chaff hives into the cellar, so that the present time finds $\frac{3}{4}$ of all my bees in chaff hives, $\frac{1}{4}$ of which are in the cellar, all raised at the bottom and fixed as above.



G. M. Doolittle, Borodino, N. Y.

I have just been in to see them, so that I might tell the reader the difference between these and those in single-walled hives. Those in the single-walled hives are clustered closely on all parts of the cluster, bottom, top and sides, the same as they would be out-doors, only not quite so completely; while those in the chaff hives are clustered just as closely as the others at the bottom of the cluster, and a little way up the sides; but as you come toward the upper half of the colony, the bees stand out around on the combs the same as they would in summer, while at the top, all along next to the cushion and cotton-cloth, they make no pretension at clustering whatever, although you can look at them a long time without any of them stirring, no matter how close you hold the light to the hive. In this way they have free access to all parts of the hive, so a colony never starves, as long as there is any honey in the hive, by their eating the honey from one side and falling to move over, as is frequently the case.

But the greatest item of the whole is, that these colonies in chaff hives do not consume nearly as much honey as do

those in single-walled hives, while the safety of their wintering successfully is more fully assured; for the less honey consumed by a good colony of bees insures their more perfect wintering. Where hives are wheeled right into the cellar, as I do mine, the labor of putting them in is little more than with single-walled hives, and this labor question is all there is against the matter, except that a less number can be put into a given space, and the saving of honey, will, I think, more than compensate for the extra room needed, and pay for building a little larger, where it should be necessary.

Borodino, N. Y.



Making Hives—Full Sheets of Foundation, Etc.

BY R. S. CHAPIN.

As asked by the editor, I will contribute my share to the American Bee Journal, which will perhaps be of some value to beginners.

I make all my hives, frames, supers, etc. I have a foot-power sawing machine, which I constructed myself, to help me on in such work. I have it so I can screw the table up any desired height for the purpose of doing rabbeting.

My hives are made to take eight Langstroth frames, which are $9\frac{1}{2}$ x $17\frac{1}{2}$, top-bar 19 inches. The hives are made from one inch lumber, well seasoned. The body of the hive is just 18 inches long, 12 inches wide and $9\frac{1}{2}$ inches deep, inside measurement, with no bee-space above the frames. An entrance, 5 inches long and $\frac{3}{4}$ deep is cut in the bottom edge of one of the end pieces. There is also a $\frac{1}{2}$ inch bee-space below the frames. There is a $\frac{1}{2}$ inch rabbet at the top of the outside edge of the side pieces to the hive, bodies and supers. The lower inside edge of the side pieces to the supers, has a corresponding rabbet (the side pieces of the supers are made $\frac{1}{2}$ inch wider than the end pieces for this purpose) which projects into the rabbet on the hive body. These rabbets keep the super from being misplaced in any way, and allows of tiering up. I have not yet found any objection to these rabbets, except the trouble of making them. The corners of the hive bodies and supers, are also rabbeted, and nailed both ways, which makes an extra strong corner, and I think equal to the dovetailed. The bottom-board is made 3 inches longer than the hive bodies, to form an alighting place. There is a cleat nailed on the under side of each end to prevent it from warping.

The cover is made from one whole, sound board, and $\frac{1}{4}$ inch larger each way than the outside dimensions of the hive. There are 2-inch cleats nailed all around the edge of the cover to keep it from warping, and also to keep it in place on the hive. The $\frac{1}{4}$ inch extra size, is so it will not work tight on the hive, because you know we must have no jarring around the bee-hive.

The super is just $5\frac{1}{2}$ inches deep, made to take the section holder arrangement. The section-holder rests on little cleats, $\frac{1}{4}$ inch square, nailed to the lower inside edge of each end piece. This makes a $\frac{1}{4}$ inch bee-space below the section-holders and none above.

I use separators and full sheets of extra thin surplus foundation. This secures full, even combs of honey in the sections. When one super is nearly full I raise it up and slip an empty one under it.

The top-bars to the brood-frames are $1\frac{1}{16}$ inches wide, and $\frac{3}{4}$ inch thick, with a saw-kerf in the center of the under side, for the purpose of fastening in foundation. I use full sheets of heavy brood foundation in wired frames. I would not dispense with wire when full sheets are used, for many reasons. Of course it is quite a bit of trouble putting the wire in. I pierce 4 holes through each end-bar. The first one about 1 inch from the top-bar, and the last one $1\frac{1}{2}$ inches from the bottom-bar. The remaining two holes are at regular distances between these two. The wire is laced back and forth through these holes and held at the ends by a small tack. The wire holds the foundation in the center of the frame, holds it from sagging, and holds the comb from breaking down when extracting, or at other times.

FULL SHEETS OF BROOD FOUNDATION.

The value of full sheets of brood foundation, in my estimation, is far greater than the cost. The principal object is that it secures straight combs. Using full sheets is the only way that straight comb will be built clear down to the bottom-bar. It also prevents the wholesale breeding of drones. Another good reason is, that when a new swarm is hived on full sheets, the queen can go right to laying without having to wait for comb to be built, and there is also a chance for all the workers to commence at once, which they cannot do when they have to commence on the top-bar without foundation.

WINTERING ON THE SUMMER STANDS.

I winter my bees in chaff hives on the summer stands, and practically without loss. I make the winter hives of $\frac{3}{4}$ inch lumber, 3 inches larger, on the inside, all around, than the outside dimensions of the summer hive. The chaff hive is just 17 inches deep on the inside. It has a gable cover which is covered with roofing-tin. It has corner posts made from 1 inch ash lumber. The sides and ends are nailed to these corner posts with No. 4 shingle nails.

To pack for winter I put 2 inches of chaff in the bottom, set the hive in, and put a super on. I then put a bridge in over the entrance, and pack chaff in all around clear to the top of the super. I then put a Hill's device, of my own make, on top of the brood-frames, and on top of this is put a chaff cushion. The summer covers are all left off.

I have yet to find out what plan of wintering is better than the above for this locality.
Marion, Mich.



Mr. Abbott's "Notions"—The "Dovetail" Joint

BY DR. C. C. MILLER.

Brother Abbott is out with his war-paint, anticipating in advance that bee-keepers would be "hopping onto his notions" as they are developed in his series of articles. I don't care to "hop" a great deal, but "take my pen in hand to inform" him of a few points in which I think some may not agree with him.

As to the kind of joint for a hive, he seems a little out of joint. It is entirely true that the so-called "dovetail" joint is not dovetail at all. By the way, will some one please arise and tell us what is its right name? Is it "fingered" or what? But, Bro. Abbott, will you please explain why you object to the name dovetail, after it has come into general use in all the books, catalogues and papers? Haven't you been using it in just the same way ever since the first sections were made? And yet I never heard a word of objection to it until it was used in a hive? Why didn't some one give us a picture of a true dovetail years ago when dovetail sections were first made?

You say that a true dovetail joint when it is once in place "could not pull apart very well if it did not have a nail in it." I am somewhat familiar with true dovetail joints, having made and put them together in boyhood, and if they are not nailed they are just as easily pulled apart as the kind used in sections and hives, only they will pull apart only in one direction.

If I have counted straight you raise three objections: difficulty of making square; unequal shrinkage; cracks for water to get in. I am a little surprised at the first objection, for having a number of such hives I found it possible to get every one of them put together square, whereas with a common joint or a halved joint, if the stuff is not cut exactly true it is much more difficult, indeed almost impossible to make a square joint. With one of these last joints, if you don't get everything exactly square before the whole thing is put together there is no remedy. With the dovetail you can put the hive together, try it with a square, and if it isn't exactly square you can push or knock it square, and then you can nail it there. At any rate, I have halved-jointed hives in large number, and I don't think they are as true as the dovetails.

The chance for unequal shrinkage is objectionable, and on that account I would never allow the stuff to lie a year without being put together. If put together before any chance for shrinkage, I don't know that there is likely to be any trouble. The unequal shrinkage of two pieces of wood, each an inch wide and an inch thick, is not likely to make a split.

As the corners of a hive do not give out first, I don't suppose there is danger that water getting into cracks will make any great trouble.

The dovetail corners have the advantage of the halved joint that they are cross nailed, with this substantial advantage that part of the wood being twice the thickness heavier nails can be used without danger of splitting. Besides, you can make a surer job of having them square. In fine, the dovetail joint is the strongest joint made, if I am any judge of such matters.

Now if all others were out of hearing, and just you and I were alone, I'd say that I think the halved joint is a really good joint, and if you like it best there's no law against your using it, but you have such a way of vigorously denouncing everything that doesn't entirely agree with your "notions," as you call them, that a beginner reading these articles, and,

supposing that they were of standard authority, would be led to think that some of the things that were generally agreed upon by the best bee-keepers were things to be carefully avoided if any degree of success was to be had. Now I don't believe it will make an iota of difference to the bees or their work as to what way the corners of the hive are fastened together. But the beginner, reading your article would be likely to put down—Mem: Mustn't have dovetail joints if I want to get any honey.

Of course you have a right to use beveled joints between the stories of hives, but it seems a pity to have that recommended to beginners when it has been so largely discarded by its former friends. The same thing may be said as to loose-hanging frames, but as you don't express yourself very fully on that point perhaps you don't mean to approve them.

On the whole, I like your vigorous way of expressing yourself, but, for the sake of those who are looking up to you for guidance, I wish when any of your opinions run squarely athwart those of men whose opinions you and I respect, you would just label such opinion—"This is one of my notions."

Marengo, Ill.

The Production of Extracted Honey.

The third in a series of articles on the subject.

BY CHAS. DADANT.

Before the invention of the pound section, and of the honey-extractor, among other methods, I used mainly boxes with suspended frames six inches deep, hanging lengthwise of the hive, but divided into two parts united together by the top-bar and which could be separated instantly. These half frames, when full of honey weighed about three pounds each, and we used to pack them in crates with glass at both ends. At that time our main sales were made on the St. Louis market, and I used to accompany the crop by boat; the Packet traffic being much more important then than it is now, my shipment was usually much admired by the passengers, and I, several times, sold quite a great deal of honey to the captain and officers of the Packet.

When I began producing honey for extracting, I found these 6-inch supers very convenient. I filled them with old drone-combs, of which, every spring, we had a quantity to render that had been removed from the brood-chambers of different hives, or that were cut out in transferring bees in box-hives to movable frames for we used to buy box-hives of bees, every spring, to replace the colonies of Italian bees in movable-frame hives that we sold every season.

The reader will notice that we have always made it a point to remove the drone-combs from the brood-apartment, as much as possible. This may be done most readily when transferring bees, whether from box-hives or other hives, as all the combs are handled one after another. This is a matter of great importance in practical bee-keeping.

Most of the drone-combs that we thus placed into our surplus cases are now good yet, I could say that they are even better to-day than formerly, as they have been filled and emptied so many times that their dark cells have been brightened up by the trimming of them with the honey-knife, and the reiterated repairs by the bees. During these repairs, the bees constantly add to their strength, so that a comb, no matter how many times it has been filled and emptied, becomes constantly better and stronger for extracting purposes.

There is however a drawback to the use of the drone-combs even for supers, it lies in the fact that they afford an unprofitable chance for the queen to deposit drone-eggs, during an irregular honey season. During a good and strong honey-flow, the bees usually fill these combs with honey almost as soon as they are placed on the hive; but if there is a succession of several rainy or cold days—in short, if the honey crop is irregular from some cause or other, there is some danger that the bees may empty some of these combs, and that the queen may visit them and fill them with eggs, thus producing a number of undesirable idlers. For this reason, it is better to fill the frames of the supers with comb foundation, or worker-combs.

At the time when we began extracting, comb foundation was not yet in use, and good worker-combs were too valuable in the brood-chamber to be recklessly used in the supers. That is why we made use of these drone-combs; but we are slowly replacing them with worker-combs in our apiaries, though we must acknowledge we are somewhat reluctant in breaking up combs that have done such good service for 20 years or more. Some of these combs have certainly been run through the extractor 40 or more times.

These shallow 6-inch frames proved as good as deeper ones, if not better, yes, I will say better than the latter. Bees

are more speedily driven from a shallow super than from a deep one; the combs are more readily handled; there is less chance for brood in the honey-combs, for they dislike to place their honey far from the brood, and as they usually begin filling from the top, they will often breed in the lower part of a 9-inch frame that they have begun filling with honey, even if they have to forsake the lower story for this. A shallow frame being quicker filled, if another story is needed and placed on top of this, there is but little danger of the queen laying eggs in the latter, as it is then separated from the brood by the already filled 6-inch frame, and the queen scarcely ventures that far from the cluster.

The reader will thus see that these shallow supers agree better with the bees' instincts than the tiering up of two or three full frame stories.

During the first years, I used to extract honey from the brood-combs of the hive, but I soon found that such a practice was attended with a great many inconveniences. The supers containing surplus honey may be removed from the hive very fast—faster, in fact, than a single comb from the body, so the bees are less disturbed or excited by the removal of a whole upper story than by the selecting and taking of a few combs out of the brood-apartment. The hive not remaining open long during the removal of the super, very few robber-bees are likely to enter it, if there are any about, and most of my readers doubtless know how they follow the bee-keeper when he opens the hives during a time of scarcity of nectar in the flowers, as is usually the case after the honey crop. Therefore, all risks of robbery are avoided.

Whenever we extracted from brood-combs, and notwithstanding the greatest care, we have always seen a few larvae displaced, and even thrown out of the combs and floating above the honey; the milky food, on which they were lying, being also mixed with the honey, if the cells of brood were unsealed. True, one may extract honey from brood-combs without such accident, if the honey be not too thick, but there is always some danger of this annoyance.

When combs containing brood are emptied they must be returned to the hives without delay, because the bees are greatly disturbed by that empty space in their brood apartment, and also because the larvae might suffer from the temperature, which is lower in the air than in the brood-nest. Supers without brood are not subject to these inconveniences, and may be retained till evening, or even till another day.

We have also noticed that, when the white honey of the June crop is left in the hive, the bees winter better upon it than upon the darker grades, for this white honey is less mixed with heterogeneous elements than the dark honey of autumn, and especially than honey-dew and fruit or sap juices. It is therefore preferable to sacrifice a small quantity of merchantable honey, to obtain a better wintering of the bees, by leaving it in the brood-combs.

As perhaps some of my readers are not fixed upon this question, of the quality of the food in wintering bees, I will say that it is the importation of bees from Italy which has demonstrated to me the influence of this quality, on their health, during a long confinement. For several years I imported queens from Italy without success. They were sent in small boxes containing comb honey, and, most of the time, they had died, after soiling the inside of the boxes, as bees do too often after a hard winter. The difference in the quantity of excrement and in the odor of it, when a part of the bees had arrived alive, led me to ask my shipper (Giuseppe Florini), to supply parts of each shipment consisting of 26 queens, with different grades of honey and with syrup made of good sugar. The result was, as I had anticipated, that the boxes containing white honey, or sugar syrup, had lost but few bees, while those that were supplied with dark honey, heath honey especially, had lost all, or nearly all the bees; in some cases the queen alone remaining alive on arrival. Some of the healthiest looking lots were preserved by me for experiments, after the queen had been removed, and some of the bees in these were still alive six weeks later. This experiment demonstrates that the poor quality of honey is one of the main factors in the loss of bees during long winter confinements, and that it is a good precaution to leave in the hives all the spring honey that is contained in the brood-chamber, instead of extracting it, and to keep the emptied surplus cases on the hives to store the fall crop, if any be gathered. The difference in price between the two grades is largely compensated by the better wintering of bees.

My readers will bear in mind that we use large hives; a surplus box covering only eight frames being altogether too small to contain the average harvest of a strong colony, when this surplus box is only 6 inches deep. Small hives are enlarged by piling up two or three full stories one upon another. We have said why we disliked them. Yet some bee-keepers,

and very practical ones, succeed with them; witness our friends E. France and Son, of Platteville, Wis. But we have tried their way and we prefer ours. Our large Quinby hive, containing 10 frames, being nearly as large as two eight-frame regular Langstroth hives, our method does not require so much work, especially since the invention of the bee-escape, which cannot be used when there is brood in the surplus box, as is almost always the case in full-story supers; for the bees will not desert the brood.

Hamilton, Ill.

(To be continued.)

Report of the Michigan State Convention.

BY W. Z. HUTCHINSON.

The dozen or so veterans that gathered in the parlor of the Perkins Hotel, Detroit, had a good, social time, and discussed the topics laid down in the programme, and those other little side-issues that crop out and often prove the most interesting part of a convention, but there was no crowd and nothing conventional. It is evident that the financial and apicultural depression has a depressing effect upon our conventions.

The forenoon of the first day (Jan. 2) was spent in chatting, recalling old times and building castles in the air. At 1:00 p. m. President M. H. Hunt called the meeting to order, and Hon. R. L. Taylor, of Lapeer, read the following essay on

Apicultural Work at the Experiment Station.

Since this Association a year ago saw fit to appoint a committee to assist in directing the apicultural work of the station, it is fitting, if not to be expected, that I should make at this annual meeting something of a report of the operations in this line under my charge.

It is with serious regret that I have to report that the character of the season has been such as to greatly interfere with the making of many of the experiments projected, and in several cases prevented their execution altogether. Of this latter class were all those that depended upon a considerable amount of swarming—such as the comparison of the amount of work done by natural swarms with that done by made swarms; the comparison of the advantages of comb, comb-foundation and starters in hives used for the reception of new swarms; and the trial of hivers and non-swarmers.

The experiment for the comparison of starters, foundation and comb was made in the season of 1893, but for several reasons besides the one that no single experiment in such matters should ever be taken as final, I greatly desired to repeat it under a set of circumstances that experience and further thought have suggested, such as to give promise of something more nearly approaching a crucial test. The impossibility of carrying out the intended comparison of natural with made swarms was a disappointment, as the comparison seems to give promise of something of much value to many in the management of an apiary.

There was some swarming in the apiary, but not sufficient to furnish swarms that could fairly be compared, since intelligent work requires the issuing of several swarms at or about the same time; besides this, the yield of nectar was so exceedingly light that the experiment, even if swarms could have been had, would have been rendered abortive. Some of the experiments which were actually carried out would no doubt have yielded results of greater value had the season been more favorable in the particulars here referred to.

STIMULATIVE FEEDING AND SPRING PROTECTION.

The first new work that engaged my attention at the opening of spring was experiments designed to test the value of stimulative feeding and the value of special protection in spring. A most thorough and comprehensive experiment was planned and carried out, with the purpose of getting some results, if possible, that might serve to help clear up the mystery that seems to envelop these subjects. About 70 colonies were taken, and as the two experiments could be made on the same set of colonies without any sort of interference, there were practically about 70 colonies used in making the experiment upon each of the two matters referred to.

A large proportion of the colonies were carefully packed with saw-dust, on their removal from the cellar, and a portion, both of the packed and the unpacked, was regularly fed during the settled weather of spring, when there was no nectar to be gathered, up to the time of white clover bloom. The most careful efforts were made to know at the outset the weight and numerical strength of each colony included in the experiment and to note the rate of increase in each of these particulars from time to time as the exigencies of the experi-

ments seemed to require, up to the end of the clover and bass-wood honey season. This course gave data from which it seemed to be mathematically demonstrated that for that season the advantage of stimulative feeding was very slight, I might say trifling, while the sawdust packing was a very serious disadvantage.

FOUNDATION FROM FOUL-BROODY COMBS.

An experiment was made which is deemed of considerable importance to determine whether foundation can be made from foul-broody combs, by the use of such a low degree of heat as to leave the foundation still infected with foul brood germs, and so the possible means of conveying the disease to healthy colonies. The highest degree of heat to which the wax was subjected in any part of the process of rendering and sheeting it was 180° Fahr., and that was for a comparatively short time during the rendering of the wax in a solar extractor, so that only a small proportion of it at any time could have felt that degree of temperature, and much of it was at no time warmer than 160° Fahr. The result was that in each of the two colonies furnished with this foundation one cell of unmistakable foul-broody matter was found, though it seemed to differ somewhat in appearance from that having the usual malignant character. The foundation was not completely drawn out, and will be carefully watched for further developments.

DIFFERENT "MAKES" OF COMB-FOUNDATION.

The more important of the other experiments so far made were those by which an attempt was made to test the qualities of different makes of foundations designed for use in sections for comb honey. One test was for the purpose of determining the comparative readiness and rapidity with which the bees did their work on each kind; and one was to determine the comparative thinness to which the bees would work the septa of each kind. All these experiments were successfully and satisfactorily made. Others of less importance it is unnecessary to mention here.

WINTERING BEES IN CELLARS.

An earnest effort is making during the present winter to throw, if possible, some light on the questions which arise relating to the wintering of bees in cellars. The question relating to the effect of moisture on the wintering of bees is given prominence. A number of colonies are placed together and are kept enveloped in cloth continually saturated with water, and some colonies are given plenty of upward ventilation, while others have none at all. If moisture has such a deleterious influence on the wintering of bees as is sometimes claimed, it is confidently expected that these experiments will disclose some of its effects with certainty.

These brief outlines will serve to give a bird's-eye view of the work that is being undertaken at the station.

What of the coming year? Shall the work be continued on the same or similar lines, or shall it be varied? and if so, in what direction and to what extent? This is of course, on the assumption that the work at the station is to be continued. But of this we have no guaranty. It is indeed the most unpleasant characteristic of this work, that its tenure is very uncertain. Perhaps it may not be possible to do away altogether with this uncertainty, and if it is not, then it must continue to be as it is and has been, that the bee-keepers of the State will have to be vigilant and active if they mean to secure the continued recognition at the station which the importance of their vocation warrants. We have been accustomed to contemplate with pride the position which our State has held among apicultural communities. It has been her won't to be at the front; shall she, because a Cook has gone, be suffered to lose that position?

This is written without reference to the question of who shall perform the work. Close contact with the work has not only magnified the importance of it, but has also revealed the burden of the labor and care necessary to do it well. The small stipend, now granted, by itself would be small inducement to a competent person to carry the burden. The stipend should be increased so that the work might be extended without compelling the operator to carry a gratuitous load.

By asking this, we ask nothing that our vocation does not deserve. Apiculture lives not to itself. Its product constituting one of the most healthful of foods, and at the same time so delectable as to be a luxury, is sure gain, being secured from what would otherwise be waste only, and it may be that this gain is but an incident to its greater bounty in causing plant and tree to yield abundantly their seed after their kind.

R. L. TAYLOR.

Mr. Taylor's essay was then discussed as follows:

M. H. Hunt—In order to have this work continued, must it be looked after each year?

R. L. Taylor—Yes, it is necessary. Each year the work is mapped out and money apportioned for this and for that, and unless bee-keepers show very clearly and emphatically their needs, they are likely to be left out. This Society should pass a resolution upon the matter and lay it before the Board; besides there should be some letters written to the members of the Board.

It was moved and carried that the Secretary draw up a set of resolutions similar to those of last year, and forward them to the chairman of the Agricultural Board.

FOUL BROOD IN COMB FOUNDATION.

W. Z. Hutchinson—Do you not think, Mr. Taylor, that the cell or two of foul brood in the colonies given the foundation made from foul-broody combs might not have come from some infected colonies in your yard? I suppose you have some yet.

Mr. Taylor—So far as I know I had no foul brood in the apiary. I am satisfied that it was foul brood, but I am not so sure that it was sufficiently virulent to be propagated. It was not exactly like the real virulent foul brood.

Mr. Hunt—As foundation is usually made there is no danger. The heat is either greater, or else it is longer continued.

Mr. Taylor—I grant that, but this experiment was made to see if it were possible to render wax and make foundation at so low a temperature that the germs of foul brood would not be killed. If it does not show next year—is not strong enough to propagate itself—we may rest assured that foundation never contains germs of the disease.

Next, Mr. Hunt read the following:

The President's Annual Address.

Since last we met, another year has been added to the existence of our State association, and it will be remembered as one more fruitful in failures than otherwise. We have not even had the solace of high prices with our short crops. Perhaps we have fared nearly as well as those of other pursuits, for it has not been "all pie" with the farmers and merchants. The drouth that shortened the honey-flow also lessened the farmers' crops, which in turn affected the merchants.

We gain some knowledge in a season like the past one that we would never get in a good one, and if taken proper advantage of will be of benefit to us when Nature is more lavish in yielding up her treasures.

SELLING HONEY AT RETAIL.

At the end of the season I found I had nearly one ton of white comb honey and about 600 pounds of extracted. This small crop I determined to sell at the very best advantage, that is, get as much as possible for it with the least trouble.

I found a person out of employment, whom I thought would make a good salesman; furnished him horse and suitable wagon, giving him half the profits, making the wholesale price the base to figure the profits from. He commenced selling on the eastern and western markets of this city (Detroit) the latter part of August—selling either in packages or bulk, as the customer might wish. Our little crop went like magic, and we have since bought and sold about five tons.

A set of scales that adjust the tare we used to weigh the pails, crocks, etc., that come to be filled. By having regular days, the customers soon learn when to come, and they rarely fail to bring a new customer along.

The groceries are supplied with pint and quart Mason jars, and jelly glasses holding $\frac{3}{4}$ of a pound; the latter sell at 15 cents each. The jelly glasses are made tight by dipping the top in melted beeswax and tallow; the honey is put in hot and immediately sealed up. This is our first season's experience with the jelly glasses, owing to the difficulty in preventing their leaking, but by the above plan they are perfectly satisfactory, and the cheapest package we know of, only costing about 2 cents each.

The result of our experiment has been satisfactory; the man employed got a living for his family, and left us much better than the wholesale price for our honey; and also established a business that will be an outlet for a good many tons of honey in after years.

M. H. HUNT.

Mr. Hunt's address was followed by this discussion:

Chas. Koeppen—Did you put on cautionary labels in regard to the candying and re-liquifying of the honey?

Pres. Hunt—We did not. When honey is sold in small quantities to families it is consumed before it candies. When sold in glass to retail dealers we always take back any that candies, and give new packages that are not candied, and the candied honey can be easily liquified by putting it in a warm

place. When we sell it in 60-lb. tins we always give instructions in regard to the candying and the liquifying.

Mr. Koeppen—I have retailed my extracted honey by putting it in lard-cans furnished with molasses gates. The cans and contents are weighed when they are left with the dealers, and the next time around they are weighed again and the dealers pay me for what has been sold.

Next came an essay from Mr. T. F. Bingham, of Abronia, ON

Influence of Patents on Improvements.

The thousands of patents granted by the most progressive nations may be regarded as evidence of their value in national and private advancement. No nation has such a complete patent system as the United States; and no other nation has ever added to the world's wealth of conveniences so much in the same space of time.

While thousands of men may move in the same society, and among the same people, having the same or similar needs and desires, not many among the thousands are inventors. Generally speaking, people do as they have been taught, and do not add to or diminish the wealth or happiness common to their ancestors. Occasionally, however, some artisan, not unlike others in environment, conceives a different plan by which a certain end can be more readily attained. It is here that the patent laws come to the aid of invention. They say to the inventor: Proceed with your experiments; perfect your invention; take out your patents, and continue your improvements. Never rest from your labors until your invention is absolutely perfect.

It is true that some people, in other respects worthy, cry out against patents. We are not called upon to discuss the reasons of their cry. It has been discovered that politicians often take up the cause of the people before election.

By securing a patent on a valuable invention, the consumer is placed in a position where he can be sure of getting the best of the kind at a reasonable price.

A patent may, or may not, be of much value. But in this age of patents, it is safe to say that any machine claiming to be an improvement or an invention—which the inventor does not patent—does not have any valuable patentable features. The undisputed evidence of an invention is the record of the Patent Office.

How often do we see valuable space taken up even in newspapers with the contention, "Who invented it? Who was the first to suggest it?" Suggestion is not invention. One may ask questions he cannot answer. The inventor is he who joins thought with Nature's forces, and patiently and persistently works out a process, or constructs a machine.

To save contention, and secure the credit due a valuable invention, and conserve the interests of the innocent consumer, every invention should be patented.

T. F. BINGHAM.

Mr. Bingham's essay was then discussed as follows:

L. A. Aspinwall—There are many small inventions that are patented and thus protected in their manufacture, to make them better and more cheaply than they could do if some Tom, Dick or Harry could step in with a cheap imitation.

Mr. Taylor—Mr. Root, has, I believe, abandoned his opposition to the patents.

Mr. Hutchinson—He has always believed in rewarding invention, but when there was no patent, Mr. Root was the one to say how great should be the reward; when there is a patent, it is the inventor who dictates the terms.

(Concluded next week.)

Early Queens the Best.

W. W. GRAVLEE.

Every consideration, perhaps, that must be observed in order to secure the highest development of the queen-bee has been given in the last two volumes of the American Bee Journal. Yet I have seen no statement as to what influence the different seasons exert upon her majesty's development and future usefulness. Are early queens—those reared about the time of early swarming—better, other things being equal, than those reared later in the season?

Against an answer in the affirmative it may be urged that it is difficult to determine. So many things are beyond our control, that we cannot know just when they are all equal. Queens from the same lot of cells vary. Some bees will probably rear better queens than others. The location and the season have something to do with the result. So I suppose we shall have to content ourselves with a comparison of the actual products of the two classes of queens.

However, some such theories as the following might be advanced in favor of early queens: Spring seems to be the most favorable season for the young of many insects and animals to obtain a foothold upon life. And those that begin their existence during this season are supposed to possess, on an average, more vigor than the ones of other seasons. Farmers want spring colts, fanciers early birds for their breeding pens. If this be true largely with animals, surely bees are no exception. I think the effect should be more marked with them. For then, they bend their energies to brood-rearing—later, to honey-gathering.

Now, every bee-keeper, I presume, has been enchanted by their gladsome hum and tireless industry—had cares driven away, and purer thoughts and nobler actions inspired. Do you not feel some such sensations to a degree somewhat proportionate to the activity displayed by the bees? When is this activity greater than at swarming time? Now, who will say that bees do not generate a large amount of magnetism, or electricity, if you prefer, when their nerves are strung to such high tension—that is, transmitted to their attendant, as from one person to another? How else do you account for the buoyant feeling and increased energy when working with them at certain times? Don't say it is all excitement. Here is probably the charm, aside from the money there is in bee-keeping, that holds most apiarists.

Now this electricity, or nerve force, is the source of life and power. Is it not reasonable to suppose that the development of the queen's nervous system, so to speak, depends largely upon the amount of energy in the hive during the first stages of her existence? Whenever we can get the greatest energy and nerve force properly directed, we shall secure the best queens. We can secure physical development almost any time, but we cannot obtain the strong nerves and their attendant energy at all seasons.

But facts are what we want. "One fact is worth a thousand theories." Yet a few colonies for only one season hardly furnish a safe guide, and this is about as far as my observation extends along this line. The queens that I shall here take notice of were reared the previous season—the early ones in April, artificially; the second lot in June, by natural swarming; the third in August, artificially. They are all from the same queen. The best early one gave over 200 pounds of honey; the best late one about 50 pounds. There was but little difference between the June and August queens. The total average was about 4 to 1 in favor of the early queens. They also gave an increase of 25 per cent., while the late ones gave none. The season was such as to put them to a severe test. During a favorable season I think the difference would be much less, probably very small. But we want bees that will give us a crop in just such years as the past one.

So, early queens seem to be more vigorous, more prolific, and longer lived than later ones. Hence they give us stronger colonies of harder bees that are longer lived, and more energetic workers, which in turn give larger crops of honey.

I shall be glad to hear from others on this subject. With my present knowledge I shall be slow to follow Mr. Simmins' advice—to use only fall queens. Newtonville, Ala.

Questions AND Answers.

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

A Plan of Dividing Colonies.

Mr. Go-he has a very strong colony of bees, which he wishes to divide in the following manner: Dividing the combs and bees as nearly equal as possible, leaving the old queen with one-half, and putting a virgin queen with the other half, using two new hives, and locating them not farther than six feet apart. Will the virgin queen hold her colony? Will either swarm out or abandon the brood and hive?

Beiden, N. Y.

C. G. M.

ANSWER.—A good deal depends upon circumstances, especially as to how the colonies are placed, and what surround them. If the part with the virgin queen is put farther from the old stand than the other part, or if any colony is nearer the old stand than the hive with the virgin queen, then you may count on all the bees deserting the virgin queen except the nurse-bees, or those under 16 days old. Indeed this will

be the case whether they have the virgin or the old queen. In neither case, however, are they likely to abandon entirely the hive, for these young bees will stay with the brood, even if they have no queen at all. There will be less desertion from the old queen than from the virgin, and if a virgin queen of too great age is given immediately on making the division, the bees will be likely to kill her. Either give a virgin queen not more than perhaps 12 hours old—younger might be better—or else leave the bees queenless 24 hours or more before giving the queen. On the whole, you may not like the plan so very well, still it is practiced by some.

The Botanical Name of Cat's-Claw.

I am further indebted to Bro. Abbott for the use of his sharp eyes in finding names. A postal from him says:

I could not give up the hunt for cat's-claw, and I finally found it. It is local, mostly in western Texas, and belongs to the Pulse Family, which furnishes most of our honey-plants. It is *Acacia Greggii*, and by some is known as *A. Wrightii*.

We are having very fine weather. Had a storm last night, but it is fine again to-day. EMERSON T. ABBOTT.

St. Joseph, Mo., Jan. 12.

Wintering Bees in a Shed.

I put 46 colonies into a shed boarded up on the back and in front down to within 5 inches of the bottom, then nailed a 4-inch strip edgewise on the inside, and put the hives up against the strip, and then packed with dry shingle and sawdust all around and on top, perhaps 8 or 10 inches deep. I left the covers on with the blankets. There is a good roof on the shed. Ought I to have taken the covers off, and have I got them too warm? I looked at two colonies one week ago, and they were all right. Do you think they will mold if the covers are tight?

Racy, Mich.

F. E. G.

ANSWER.—I should think your hives are all right as they are, although I have had but little experience in that line. Don't have the entrance too much closed. Perhaps it's best to have the entrance as large as in the middle of summer. It might be a good thing to see that the wind doesn't have a chance to blow directly in at the entrance. A board a foot wide placed a foot from the hives would break the force of the wind.

Combs Molding in the Hives in the Cellar.

Some of my bees have molded in the cellar. I made a frame and raised them one inch off the bottom-board, and left off the covers, using a quilt of $\frac{1}{2}$ -pound of cotton to each colony, covered with burlap. I never wintered any bees in the cellar before. I had them all out, and they had a good flight last week. I took out all of the empty combs, and put them up where they will be perfectly dry. My cellar is not damp, to speak of. We have had very warm weather here this winter, for this locality. What will be my best remedy for the moldy combs?

S. D. M.

Albany, N. Y.

ANSWER.—You have already applied the best remedy. Just keep the combs in a place that is perfectly dry, and then next summer give them to the bees, and they'll make a nice job of cleaning them up. Your cellar is probably a little too close. Plan some way to give it a little more air, and that will stop the molding, and also make it healthier for your family to live over.

Patented Hives in the United States.

Are there any bee-hives in the United States patented so that a person cannot make them for his own use? If so, please name the kinds? ☐ ☐ ☐ ☐ W. H. R. Woods, Oreg.

ANSWER.—I should be obliged to go to the Patent-Office records at Washington to find out all the hives that are patented, and I suppose it would take up a large part of the Bee Journal just to contain their names. Of course, if there is a patent on a hive, you are not allowed to make it either for the use of others or for yourself. ☐ ☐ ☐ ☐

There seems to be in the minds of a good many people the belief that if an article is patented, the patent is only to pro-

test the patentee against other manufacturers competing in the sale of the article, but that any one may manufacture all he likes for his individual use. A little thought will show that in many cases such a view would entirely nullify any benefit that might come from the patent laws. Those laws are intended for the benefit of the people at large, and all wise people will have respect for them, as they encourage the invention of articles that will make short-cuts in labor.

Some patented articles are very complicated, and some are very simple. The latter are all the more valuable because they are simple, for it is very plain that an article requiring expensive machinery to make it would not be as much for the good of the public as one that could be made readily by any one without machinery. But in this latter case, suppose each one were allowed to make for his own use, where would there be any protection to the patentee?

While it is true that there are patent hives by the hundred, it is not equally true that they are all valuable. I remember seeing a very complicated patent hive on exhibition at the great Fair at Toronto, on the occasion of the meeting of the North American Bee-Keepers' Association there. It was examined with interest by bee-keepers there, not because there was a single feature about it that a practical bee-keeper would want to use, but it was a matter of interest to see how much expense could be put upon a single hive with no corresponding advantages.

The only patented feature about a bee-hive that all bee-keepers seem agreed upon as of general value is the movable-comb system. This was patented by Father Langstroth, but the patent expired years ago. I think most bee-keepers now-a-days use hives that contain no patented features, not considering them desirable. There are some, however, who use some one of the patented hives, having faith in them, and if any one has a desire to use such a hive the only straight course is to secure the privilege from the owner of the patent by paying the customary fee.

The Bees are Probably All Right.

My bees, owing to the severity of the weather, have not had a cleansing flight since before Christmas. On several mornings I have found half a dozen or more dead bees before the hive in the sun. Do they need water? If so, how is it best supplied? I keep the hives protected and shaded against the sun. The highest thermometer was 44° in the shade.

Harmony, Pa., Jan. 18.

G. W. M.

ANSWER.—I don't suppose there's a thing wrong with your bees, and the best thing you can probably do is to let them severely alone. More or less bees are dying all through the winter.

How Hives with Bees Become Lighter in Winter.

If a good, strong colony of bees is put into the cellar, as a general rule does it get lighter? Where does the honey go when the bees don't get out of the hive? If the hive does not get any lighter, what do the bees live on?

Rockford, Ill.

G. R. M.

ANSWER.—Did you never notice water running out of the entrance of a hive on a cold morning? That's the moisture that comes from the bees, and of course it comes from the food taken into the system. You can often see drops of water standing on the back wall of a hive in the cellar. All that, lessens the weight of a hive, and it will also be materially lessened by the weight of the bees that come out to die through the winter. Weigh a hive in the fall, and you'll find it a good deal lighter in the spring.

"Brown German" Bees—Size of Bees.

1. Would a cross between the large German brown bee and the Italian give us a good, all-purpose bee?
2. Which of the two races of bees is the largest—the German brown bee or the Italian?

H.

ANSWERS.—1. Every now and then some one speaks of a brown bee or a gray bee, and I think there is an impression more or less prevailing that these are different from the common black bee. As nearly as I can learn they are all the same thing. There may be a difference according to locality, and I've seen the claim made that there was a difference in size in different localities, but when you get right down to the bottom I think you'll find that the German brown bee is the common black bee. At any rate they don't claim anything different in

Germany, I think. So you will have your answer by knowing what the ordinary crosses of the Italian are, or what are commonly called hybrids. I believe some have kept established strains of this cross, but they seem never to have gained very general recognition as a desirable thing.

2. Without measuring closely, I don't believe you can see any difference.

How Long Can Bees be Kept in the Cellar?

1. How long can bees be kept in a cellar, confined in a hive, if they have plenty to eat?

2. Will a cellar under a house do if it is a little damp?

I have been a bee-keeper for 15 years, and I have always left the hives out-doors on a bench. I have 13 colonies, and some of them are very weak. I feed them when the weather is suitable. I have been a reader of the Bee Journal for three weeks, and I don't see how I could do without it.

Fortville, Ind.

J. M. K.

ANSWERS.—1. I don't know. Mine are generally confined four or five months, and if everything was kept in best shape I suppose they would stand it longer.

2. Yes, only bees will not stand as much cold in a damp as in a dry cellar. Try not to let it go below 40°, and it would be well if it staid as high as 45, but not above 48 or 50.

Don't fool too much with those bees, feeding them in winter. If you think there's no danger of their starving, let them alone.

Eggs and Larvæ—Asbestos for Hive-Lining.

1. If eggs are taken out of a hive, how long can they be kept out and put back and hatch?

2. If a larva one day old, or thereabouts (well supplied with food, and the weather warm), be taken out of the hive, how long can it be kept out, put back, and live?

3. Can one send 300 to 500 miles, when the weather is warm, and get eggs and young brood and rear queens from the same?

4. Why not line bee-hives with asbestos? Fire cannot penetrate it, and I do not see how the cold could.

Humphrey, Nebr.

ANSWERS.—1. I don't know. I've tried it for a day or two, but the bees destroyed the eggs.

2. If you keep a brood-comb out of a hive a day, you'll find the larger larvæ coming out of the cells, from starvation I suppose, and I don't know whether the little ones can stand it much longer.

3. I doubt if it would work.

4. I don't know why it shouldn't be a good thing, if expense isn't in the way.

'Tis Winter-Time Again.

BY ED JOLLEY.

Serene and still the snow-clad hill
Looms up against the sky;
The wind does blow the sifting snow,
In places drifting high.
In the woodlands gray the wild winds play
With forest giants bold,
And through the vale there comes the wail
Of Winter, fierce and cold.

In stables warm, away from storm,
The lowing kine do keep,
While in the fold, so free from cold,
The shepherds' flocks now sleep.
And off to school to learn a rule,
And cipher, read and spell,
The children ride with joyous pride
At the sound of many a bell.

In the easy chair, so free from care,
The good man sits and reads,
While to the work she cannot shirk
The good wife cheerily speeds.
Around the hearth there's joy and mirth,
As evening rounds the scene—
There's nuts to crack, and the apple sack,
And a story-page to glean.

And all is well—oh, joy to tell!
Within the farmer's cot.
But how are these—their little bees—
Beyond the garden spot,
With hives snow-capped and cold enwrapped?
We trust to Highest Power,
To hear their hum when spring days come
O'er the gently blowing flower. Franklin, Pa.

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| MRS. JENNIE ATCHLEY | - - - | "THE SUNNY SOUTHLAND." |
| "GLENER" | - - - | "AMONG THE BEE-PAPERS." |
| "BEE-MASTER" | - - - | "CANADIAN BEEDOM." |
| DR. F. L. PEIRO | - - - | "DOCTOR'S HINTS." |
| REV. EMERSON T. ABBOTT | - - - | "NOTES AND COMMENTS." |

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Editorial Budget.

The Ontario Convention must have been a good one, if Bee-Master's report on page 89 is any indicator. Canadian readers, as well as all others, will be interested in reading it.

The Sunny Southland department is omitted this week, as Mrs. Atchley failed to send copy in time. She has been so very busy the past month that it is a wonder she keeps up at all. Next week, without doubt, the report of that big Texas bee-meeting will be continued in her department, and then be published without further break.

Mr. F. A. Gemmill, of Stratford, Ont., has kindly sent me two of the circulars they used at the Ontario convention in advertising the "Honey-Bee Concert." The 4-page one is indeed a novelty. Besides the programme for the evening, it contains information about honey, and several comic apiarian pictures. It is very "taking." The people who failed to "get there" (and I was one of them), missed a treat. Well, there's nothing selfish about me, so I'll say I'm glad some of my good friends could enjoy it, if I couldn't.

Notes and Comments is another new department begun in this number (page 90) of the American Bee Journal. Mr. Abbott, who is the "Noter" and "Commenter," needs no introduction to our readers. He will likely touch on a good many things in bee-literature and bee-keeping mainly outside of any of the other departments found in the Bee Journal. Judging from his first installment, and what is to follow (copy now in my hands), he will keep up a lively department. As a preacher, we can imagine no one going to sleep in Mr. Abbott's audience. Surely, no one will be apt to nod when reading "Notes and Comments."

The New Form of the American Bee Journal pleases, and also occasionally does not find favor. Franklin Wilcox, of Wisconsin, wrote thus, after saying he didn't just fancy it: "But you can't suit everybody. Don't try. Some write to flatter—but not I." I think that nearly everybody will like this new form all right after getting accustomed to it. I hope so, for to me it seems "just the thing." Better get a binder for this year's numbers, and see what a fine volume (book) you will have at the end of the year. Price of binder, 75 cents, postpaid; or \$1.60 for the binder and the American Bee Journal for one year. The binder is a good, strong one.

Attending Bee-Conventions.—I have received a number of very cordial invitations to attend certain conventions of bee-keepers, held in various parts of the country, and truly I should indeed be glad if I could accept them, and be present at the meetings. Not that my presence would add to the interest or profit of the meetings, but I would personally enjoy so much getting acquainted with the bee-keeping friends, and I would also gain bee-information that would be of much advantage to me.

But at present I will have to forego the great pleasure I would have in gratifying the wishes of my friends and my own enjoyment, for no one outside of those acquainted with publishing a weekly paper, can have an idea of the constant "grind" necessary to get the American Bee Journal out, and "on time," each week. It requires my closest attention, both day and night, and has been so ever since I first became its editor and publisher—June 1, 1892.

Some day, when I get the old American Bee Journal just where I want it (in its contents and office management), I expect to be able to devote some time to attending bee-convention, and in forming an acquaintance with the bee-friends and their various localities. Until that time, I must content myself with constant toil, hoping that that "good time," so long looked forward to, will come not many years hence.

Sympathetic and Consoling Words have come from many sources to Mrs. York and myself in our recent bereavement, and we want to assure all of our friends that their kindly interest and expressions have been greatly appreciated. I am so glad to know that bee-keepers are not so selfishly racing after the dollars and cents that they have no time to stop to speak a word of comfort or do a kindly deed. Among the numerous "treasured memories" received, there is room here for but one, which reads thus:

DEAR FRIENDS:—I know how impossible it is to silence your grief with words. I am also made sad to learn of the death of your sweet little baby girl. Your hearts plead for utterance in tears, and let them speak thus. I bow in sorrow at the taking of your little one, feeling that while the ripened fruit may be gathered, it seems cruel that the bud should be taken before it has even opportunity to unfold its blossom. But in Nature fruits fall, and so do blossoms and buds. In the ways of kind Nature this is perhaps best, and in the taking from your arms of this little one, you should try to accept the cross and bear it, believing that the bud will yet blossom and bear fruit in the Angel Land, whither the spirit of your pure child has so early flown.

Your friend,

JENNIE ATCHLEY.

Flying Colors.—Editor Hutchinson, of the Bee-Keepers' Review, had this as the first editorial item in his January number:

The American Bee Journal has changed its form, reduced the number of its pages, but made them correspondingly larger, is using a better grade of paper, has secured some excellent contributors, and two more sub-editors, and, all in all, starts the new year with flying colors.

Thanks, Bro. H. Those "flying colors," though not seen distinctly, are represented by the United States flag, found on the first page of each number of the American Bee Journal.

It waves "Success" on every breeze,
To all our friends who now keep bees.

The Wisconsin Convention, at Madison, on Feb. 6 and 7, promised to be a very interesting one. I noticed, by the printed program sent me by Pres. Franklin Wilcox, that not a single essay is to be read—simply one big question-box, in which all can "take a hand." My, what a fine opportunity for Dr. Miller to enjoy himself. I hope he has been invited to be there, for a convention with no essays at all would simply "make his mouth water" for a whole week before and after. I shall be glad to see the report of that Wisconsin convention. They have some good bee-keepers in that region.

Mr. John Hufford, of Perrysburg, Ohio, has recently suffered great affliction in the loss, by death, of his son "Frank," 19 years old, and the main help in the bee-yard. Mr. H., having only one arm, he will miss his helpful boy very much, besides enduring all the sorrow.

A Correction.—Between the 3rd and 4th lines below the first illustration on page 51, put in these words, and it will be as it was intended: *and the true dovetailed joint.* In the 7th line below the same picture, read *make* for "made," and it will be as Mr. Abbott had it in his "copy."

Among the Bee-Papers

Conducted by "GLENER."

A "BEE-SPACE" CONSIDERED.

"A $\frac{3}{8}$ inch space is not a bee-space. Just half that room is a bee-space. When more than $\frac{3}{16}$ of an inch space is allowed, then the bees will utilize the room for drones or what is called brace-combs."—Apiculturist.

For a long time $\frac{3}{8}$ was the orthodox thing, then it got worked down to $\frac{1}{4}$, and the "ABC of Bee-Culture" called it a scant $\frac{1}{4}$, but this is the first time I remember to have seen it called $\frac{3}{16}$. If bees will not plug propolis into $\frac{3}{16}$, then Alley's space is best.

SEALED COVERS DEFENDED.

E. France comes to the defense of sealed covers, in Gleanings. He has used them successfully for 30 years. He covers the hive with an inch board, then puts over that straw 4 to 6 inches deep in the upper chamber, throwing away the straw in spring.

EIGHT OR TEN FRAME HIVES—WHICH?

The discussion as to size of hives doesn't seem settled. E. France says in Gleanings that he's on the fence. He runs his bees in hives three stories high, some of them having 24 frames, and some of them 27. He hardly knows which he likes best. He keeps the lowest story filled with brood, extracts from the upper two, and if he finds brood above he puts it down, or uses it to make new colonies.

BEE-KEEPING IN CUBA.

200 to 500 colonies can be kept in one location; one man can manage 700 or 800 colonies by having an assistant during extracting time; but buyers pay only 20 to 50 cents a gallon for honey, or 2 to 5 cents a pound. So says Fred L. Craycraft in Gleanings.

THE EUCALYPTUS OF CALIFORNIA.

Prof. Cook is quite enthusiastic in Gleanings over a tree in California that he has found his bees at work upon during the many bright warm days of October, November and December. It is *Eucalyptus longifolia*, has very showy and beautiful flowers that are creamy white, and continues in bloom ten weeks. Another eucalyptus, probably *E. rostrata*, is said to be very fatal to bees, Mr. L. L. Pond having taken gallons of dead bees from beneath the blooming trees.

SCOTT'S SUPER LIFTER.

Geo. G. Scott's arrangement for raising supers (see page 34) will work nicely with little power, but why doesn't he go on and finish up telling what is to be done? For with the super raised above the hive we are still to do all the work that we would have to do without the lifter. What's the rest of his plan? On the whole, isn't it better to have something lighter than a super with 56 sections? And yet I know that some good crops of honey have been harvested with those same seven wide frames, of eight sections each.

BEE-PARALYSIS AND THE DRUG CURE.

Adrian Getaz treats the matter (see page 34) as though quite familiar with his subject, and leaves it in rather a hopeless condition, unless it be that he thinks some drug may be efficacious to cure both paralysis and foul brood. Good authorities have said that it is useless to look to drugs, but cures from drugs have been reported, and if enough of them come well authenticated, we may still put some trust in them.

Mr. Getaz objects to formic acid, because bees always have it, "and if it was such a good cure bees never would be sick." But the very fact that it's a staple article with bees is used an argument by others that it's good for foul brood, and that there may be a shortage of the supply, and then comes disease, when the bee-keeper can set things to rights by making good the deficiency.

STOPPING FURTHER SWARMING.

Jas. Polindexter's essay (on page 36) is a model essay, packed and compact. I'm sure a good many will want him to answer the following questions:

How many cases have you treated in the way you describe after the bees have swarmed? What per cent. swarmed again after the treatment? What per cent. killed the old queen after her release, and sent out a swarm with a young queen?

Canadian Beedom.

Conducted by "BEE-MASTER."

The Ontario Bee-Keepers' Convention.

The Ontario Bee-Keepers' Association held its annual meeting in Stratford, Jan. 22, 23 and 24. A large attendance had been expected, but, owing to stormy weather, many were prevented from coming who had fully intended being there. Those present, however, entered heartily into the spirit of the occasion, and the proceedings were full of interest.

The retiring President, Mr. A. Pickett, of Nassagaweya, in his opening address, reviewed the past honey season, which, owing to great heat and prolonged drouth, had not been a prosperous one. On the whole, not more than half a crop had been obtained. Feeling reference was made to the lamented death of Mr. S. Cornell, of Lindsay, the able Secretary of the Association. Much benefit had been reaped by the honey industry from Provincial legislation, especially the Foul Brood and Spraying laws. Regret was expressed at the rejection by the Dominion Senate of the Pure Honey Bill. There had been much dissatisfaction at the non-receipt of the prizes won by Ontario bee-keepers at the Chicago World's Fair, but the assurance had been given that they would not be delayed much longer.

CONVENTIONS—MAKING THEM MORE SUCCESSFUL.

A. W. Sherrington, of Walkerton, read an essay on "Conventions, and How to Make Them More Successful." He advocated bringing new men to the front and infusing fresh life into the proceedings. A discussion on the essay resulted in a resolution to appoint a committee on programme, and to make earlier arrangements.

SPRAYING FRUIT-TREES.

Prof. Fletcher, of the Ottawa Experimental Farm, spoke on the subject of spraying fruit-trees. The results of his experiments had proved that bees are liable to be poisoned if fruit-trees are sprayed with arsenical compounds while in bloom; that the danger is increased if the weather is propitious for activity on the part of the bees; and that spraying is no benefit to the fruit-trees until after the bloom falls. The spraying law, now in force in Ontario, is therefore in the interest both of bees and fruit.

FOUL BROOD—FUTURE OF BEE-KEEPING.

Mr. Wm. McEvoy, Foul Brood Inspector, gave a report of his year's work. He was glad to say that the disease had almost wholly disappeared in many localities where it formerly prevailed, but it was breaking out in other places, and needed a constant exercise of vigilance.

Mr. W. Z. Hutchinson, of Flint, Mich., read an essay entitled: "Will the future of bee-keeping be different from the past?" He held that it would. It would not, so much in the hands of specialists, many of whom had found it difficult to make a living out of bee-keeping alone, owing to a succession of unfavorable seasons. It was likely to become more of a side-issue and to be combined with other branches of rural industry. In the discussion that followed, the opinion seemed to prevail that the outlook for Canadian bee-keepers was brighter than that in the United States, owing to there being less trouble in this country from glucose adulteration.

DIFFICULTIES IN BEE-KEEPING.

A long and well-sustained discussion sprung up on an essay by Mr. J. K. Darling, entitled, "Some Difficulties." There were winter losses to contend with; spring dwindling; when bees were taken out of the cellar there was apt to be a mix-up and much confusion; some hives got crowded, others were depopulated. There was balling of the queens, and when increase was wanted, hives were queenless. Then when the honey-flow came, it was difficult to make the bees go to work in the upper stories. These and other difficulties opened up a wide field for discussion, embracing cellar and out-door wintering, the best way of putting out bees in spring that had been cellar-wintered, and the advisability of packing as a protection against backward spring weather. Great stress was laid by some on putting bees wintered in the cellar on the same stands occupied by them the previous season, to prevent the mixing and confusion described by Mr. Darling. Out-door wintering was advised to prevent spring dwindling and mixing of colonies. Mr. Pettit and others were strong in advocacy

of the cellar, and described their methods. To finish up the subject, Mr. R. H. Smith, of St. Thomas, read an essay on the advantages of wintering bees on the summer stands, cased in chaff-packed hives, with directions how to do it in the best manner.

MARKETING THE HONEY.

Mr. F. A. Gemmill read an essay on "Experiences in Marketing Honey," urging the greatest care in putting the finished product in the best possible condition, so as to be attractive to customers. Discussion on this and one or two other essays was laid over, and the opportunity did not return. Generally speaking, the time to discuss a subject is when it is fresh. After some delay, the points have somewhat faded. Alas! for the essay that is read just before adjournment for dinner or supper!

DOMINION EXPERIMENT APIARY.

The Dominion Government has started a small experimental apiary in charge of Prof. Fletcher, with a practical assistant. It has only been in operation one season, and the Professor gave some details of what had been done in experimenting with comb foundation. The work was incomplete, but so far as it had gone it emphasized the importance of using the best quality of beeswax, and not making foundation for sections lighter than seven feet to the pound. A vote of thanks was passed to the Dominion Government for the interest shown by it in bee-keeping, and to Prof. Fletcher for his presence and address.

EDUCATION—HONEY-BEE CONCERT.

Mr. Allen Pringle read an essay on "Education," which discussed the general subject without special application to bee-keeping, more than to any other occupation. It contained some original and practical ideas, in regard to which there was naturally some difference of opinion.

Mr. F. A. Gemmill's "Honey-Bee Concert" came off in due course. It was not so great a success as it deserved to be, owing to the inclemency of the weather, but a pleasant evening was spent in music, song, hearing addresses, and seeing magic lantern pictures. Mr. R. McKnight gave an address on features of bee-life not generally known. C. C. James, Esq., Deputy Minister of Agriculture, spoke at some length on the value of skill in the various branches of rural industry, with a special application to bee-keeping. The magic lantern part of the entertainment, given by Mr. R. F. Holtermann, would have been more pleasing but for a deficiency of light in showing the pictures on the sheet. Many of them were too dim and indistinct to be seen clearly.

THE OFFICERS—BUSINESS WIND-UP.

The election of officers resulted in the appointment of Mr. J. B. Hall as President, an honor tendered him before, but declined by him until now; Mr. J. K. Darling, Vice-President; and a Board of 13 Directors—one for each district into which the Province is divided by the Agriculture and Arts Act.

The new President had a brief taste of office while the business was being wound up. Mr. Holtermann proposed the adoption of a score-card for judging honey by points in the same way as poultry is judged at exhibitions, which was adopted.

A resolution of thanks was proposed to the members of Parliament, who had voted in favor of the Pure Honey Bill. It was objected that this was unusual, and that if the branch of the House that favored the Bill was to be thanked, the Senate which rejected it should be censured. But these views did not prevail, and the resolution carried.

It was decided to hold a special meeting of the Association at Toronto in September, when the North American society meets there, and on the completion of business adjournment was made to that date.

The Board of Directors met when the public meeting had adjourned, and transacted several items of business. Mr. Wm. Couse was reappointed Secretary; Martin Emigh, Treasurer; Mr. McEvoy Foul Brood Inspector; and Mr. F. A. Gemmill, Sub-Inspector. The sum of \$200 was set apart for affiliated societies, no one to receive more than \$20; the Canadian Bee Journal was selected as the premium to members for the year; \$25 was appropriated for prizes at the Toronto Industrial, and a like sum for the Western Fair. The President, Vice-President and Secretary were appointed as the Executive Committee, and Brantford was chosen as the place of the next annual meeting.

A Moderate Increase of colonies in one season, will, in the long run, prove to be the easiest, safest, and cheapest mode of managing bees.—*Laugstroth.*

Notes AND Comments.

CONDUCTED BY

Rev. Emerson T. Abbott, St. Joseph, Mo.

Too Good to Keep.—"A report of four columns in the papers gave the discussion, while not an essay was printed, although some good ones were read." Extract from "Stray Straws," about the Marengo, Ill., Horticultural meeting.

"Tell it not in Gath, publish it not in the streets of Askelon; lest the daughters of the Philistines (believers in essays) rejoice."

Right in the Doctor's own city, in a society of which he is no doubt a member, and in whose deliberations he no doubt took part, they had essays! "Good ones," too! Who would have thought it! That was a very grave mistake, not to take up all the time with apple and berry "talk;" but, then, we all be very frail mortals and will "make mistakes."

Not a Good Plan.—The following from an old bee-paper is worthy of some further attention: "It may be, however that in the very mild winters of Colorado it is warm enough for them to find the food above, especially if on a warm day you pound or kick the hive to rouse them up thoroughly."

Owing to the continued cooling of the earth and the lateral pressure that has been going on for some time, on account of said cooling, the elevation of the Rockies has greatly increased, and the climate has changed very much since the above was written, as the mercury has been known to hover around 20° below not long since in this land of "mild winters." Then, if the weather were ever so mild, they surely must have had the worst kind of luck those days in wintering their bees, if they practiced "pounding and kicking" the hives in order to wake up the bees and make them eat. If they had ever known about my sugar candy, they might have saved all that trouble, and the bees, too, I opine. The less the bees are stirred up in January and February, the more bees there will be to stir up when March comes.

Another One.—The program of the Ontario Bee-Keepers' Association made provision for nine lectures and essays, and among the names of those who were to read essays was found the name of the editor of the Review. How is that, Friend H.? Will you inflict such punishment on those people who may come a long way, and at a great cost? But, to be serious, that essay is sure to have something of value in it, and here is a very strong argument for essays. Friend Hutchinson is not much of a talker, but he drives a tremendous pen, and when he sits down to write an essay on any subject pertaining to bees, it is sure to be as full of meat as a cocoanut is of milk. Do you see the point? Score one for essays. Next.

So Have We.—"Our cheese as well as our honey was the best at the World's Fair." "Ontario has a climate as well as the flora for producing the best." "The linden, the clover, the thistle, the raspberry, the maple, the willow, the sumac, the buckwheat, the golden-rod, and numerous other plants yield abundantly."—Allen Pringle, on page 26.

What is the matter with our good friends over the line, anyway? Do they not know that all those things grow in this poor, benighted country? and that only one of them—clover—furnishes real, all-around first-class honey? Of this we have as much as they. As for climate—well, I always thought that the dry, high altitudes furnished the best honey, and I am inclined to think so yet. Then, again, do they not know that we have sweet clover and alfalfa over here in this great country of ours? When it comes to competing with either of these, none of the plants mentioned above are "in it." Why, I saw 2500 pounds of alfalfa honey, which was shipped to this city a short time ago, that was the equal of any honey at the World's Fair, and I am sure that it was superior to any honey there which was not gathered from the same source, if flavor, body and color are the things that count in comb honey. I do not think the United States need to go out of the honey-business simply because some other country (if she did) took more premiums at the World's Fair. They can have the premiums, but as long as alfalfa and sweet clover grow, and we have the fertile lands and favorable climate of the great West, we will go on producing as good honey as there is in the world, just the same.

Now, Friend Pringle, you had your say, and I had mine; and so we are even.

Convention Notices.

MINNESOTA.—The regular semi-annual meeting of the Southern Minnesota Bee-Keepers' Association will be held on the first Monday in May, 1895, at LaCrescent, Minn. All beekeepers invited. E. C. CORNWELL, Sec. Winona, Minn.

UTAH.—The Utah Bee-Keepers' Association will hold their semi-annual meeting on Thursday, April 4, 1895, at 10 a.m., in the Fish Commissioner's rooms in the new city and county building, Salt Lake City. GEO. E. DUDLEY, Sec. Provo, Utah.

NEW YORK.—The Cortland Union Bee-Keepers' Association will hold their Annual meeting at Good Templars' Hall, Cortland, N. Y., Saturday, Feb. 9, 1894. All interested, especially bee-keepers, are cordially invited to attend. C. W. WILKINS, Sec. Homer, N. Y.

TEXAS.—The Texas State Bee-Keepers' Association will hold its 17th annual convention at the apary of W. R. Graham, in Greenville, Tex., on Wednesday and Thursday, April 3 and 4, 1895. All interested are invited to attend. "NO HOTEL BILLS." Ft. Worth, Tex. DR. WM. R. HOWARD, Sec.

KANSAS.—There will be a meeting of the Southeastern Kansas Bee-Keepers' Association on March 16, 1895, at Goodno's Hall, in Bronson, Bourbon Co., Kans. It is the annual meeting, and all members are requested to be present, and all bee-keepers are cordially invited. J. C. BALCH, Sec. Bronson, Kans.

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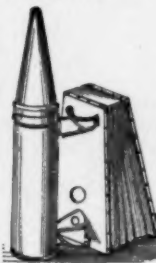
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CHAS. ISRAEL & BROS., 110 Hudson St. I. J. STRINGHAM, 105 Park Place.

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BATTERSON & Co., 167 & 169 Scott St.

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Philadelphia, Pa.

WM. A. SELSER, 10 Vine St.

Cincinnati, Ohio.

C. F. MUTH & SON, cor. Freeman & Central avs.

Honey & Beeswax Market Quotations.

CHICAGO, ILL., Dec. 27.—Up to the present the sales on honey have met with our expectations. We have received considerably more honey than we figured on handling, owing to the short crop report, and we think the early shippers reaped the benefit. However, we are now getting the average price, viz.: Fancy, 15c.; white, No. 1, 14@13c. Extracted, 6@7c. Beeswax, 28@29c. J. A. L.

CHICAGO, ILL., Jan. 3.—As usual, the volume of trade in honey is small at this season. But our stock is not heavy, and soon as this month is past we expect a demand that will clean out all present and prospective offerings. Comb sells at 14c. for good white; fancy brings 15c.; dark grades, 8@12c. Extracted white, 6@7c.; dark, 5@6c. Beeswax, 27@28c. R. A. B. & Co.

NEW YORK, N. Y., Dec. 20.—The market for comb and extracted honey is good, and the supply equals the demand. Fancy clover and buckwheat sells best; off grades are not quite as salable; and 2-pound sections are little called for. We quote as follows: 1-pound fancy clover, 13@14c.; 2-pound, 12@13c.; 1-pound white, 12@12 1/2c.; 2-pound, 12c.; 1-pound fair, 10@11c.; 2-pound, 10@11c.; 1-pound buckwheat, 10@11c.; 2-pound, 9@10c. Extracted, clover and basswood, 6@6 1/2c.; buckwheat, 5@5 1/2c.; Southern, 50@60c. per gallon. Beeswax, scarce and in good demand at 29@30c. C. I. & B.

CINCINNATI, O., Jan. 7.—Demand for honey is very quiet since the holidays, and prices are unchanged. Comb honey brings 14@16c. for best white, and extracted 4@7c. Beeswax is in good demand at 23@28c. for good to choice yellow. C. F. M. & S.

KANSAS CITY, Mo., Jan. 7.—The demand for both comb and extracted is light. Supply good. We quote: No. 1 white comb, 1-lbs., 14@15c.; No. 2 white, 12@13c.; No. 1 amber, 13c.; No. 2 amber, 10@11c. Extracted, white, 6@6 1/2c.; amber, 5@5 1/2c.; dark, 4 1/2c. Beeswax, 22@25c. C. C. C. & Co.

PHILADELPHIA, PA., Jan. 31.—Comb honey is very plenty and slow of sale at 12@13c. Extracted in fair demand at 5@6 1/2c. Beeswax scarce at 27@30c. W. A. S.

BUFFALO, N. Y., Jan. 21.—The honey market is very quiet. We quote: Fancy, 13@14c.; choice, 10@12c.; off grades moving slowly, trade being only on fancy; buckwheat slow at 8@10c. Extracted very dull at 5@6c. Beeswax, 28@30c. B. & Co.

NEW YORK, N. Y., Dec. 31.—The demand for comb honey has been very light of late and has now almost dwindled down to nothing. The supply has been accumulating and there is a large stock on the market. In order to move it in round lots, it will be necessary to make liberal concessions from ruling quotations. We quote: Fancy white, 1-lbs., 13c.; off grades, 11c.; buckwheat, 9c. We have nothing new to report in extracted. It is moving off slow and plenty of stock on the market, with more arriving. Beeswax is steady and finds ready sale on arrival at 30c. per pound. H. B. & S.

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Question-Box.

In the multitude of counsellors there is safety.—Prov. 11-14.

How Many Colonies Can He Keep in His Location?

Query 957.—First, I will give the source from which our honey comes. We have perhaps 100 acres of willow, soft maple and elm; next comes fruit-bloom, trees without number of all kinds, and after this, white and Alsike clover, of which we have at least 100 acres. Following these, the mammoth clover helps to finish up sections. Then comes (the "get there" everybody) the basswood; about 3000 trees are within reach of my bees. There is plenty of buckwheat here, but it does not secrete of late years. And last, but not least, fall flowers are waving in every direction. I think there were 500 acres of golden-rod, asters, snapdragon, etc., also in range of same. Now comes my question: How many colonies can I keep in one place, here, and make it pay?—Michigan.

G. M. Doolittle—From 200 to 300.

Chas. Dadant & Son—100 to 150 colonies.

Eugene Secor—500 in such a favored locality.

Rev. M. Mahin—As many as one man can manage.

Jas. A. Stone—I would say 200 colonies. Try it, and see.

E. France—100 to begin with, if you know how to handle them.

W. G. Larrabee—You have a good locality that ought to support 150 colonies, or perhaps more.

C. H. Dibbern—I should think you had a field that would easily support profitably 200 to 300 colonies.

Prof. A. J. Cook—Surely 100 colonies; perhaps more, though occasional years of drouth will leave you honeyless and moneyless.

P. H. Elwood—Try it and let us know. I don't know. Quinby thought 60 or 70 in a place paid best in the Mohawk Valley (N. Y.)

Dr. C. C. Miller—Just from reading the description it sounds as if 300 or 400 might do well, but when you actually try it you may find 100 to 150 enough. □ □ □ □ □ □ □ □ □ □

J. E. Pond—This is one of the questions that can only be answered by guess. Perhaps 200 colonies would be about right. Much will depend upon management, however.

Mrs. Jennie Atchley—You kind of scare me. I don't know. But if all your trees and shrubs, weeds, etc., produce honey in abundance, it will be hard to overstock your locality.

Dr. J. P. H. Brown—It depends upon how the location is already stocked. If few colonies are kept by others, you might venture 50 or 75, and in favorable seasons it might support 100.

B. Taylor—In a locality very similar to this, I have kept 200 colonies, and good yields from them. Much depends upon the apiarist as to how many colonies can be profitably kept in one yard.

Rev. Emerson T. Abbott—That depends entirely upon the man who bosses the job. I should not want more than

200 colonies in any one place, yet a good man at the business might make a larger number profitable where there is such an abundance of bee-pasture.

H. D. Cutting—I would like to have 200 colonies in just such a location. BUT I have seen just that kind of location, and 25 colonies did not average 10 pounds per colony. You must have other conditions.

Mrs. L. Harrison—I do not know. The most that I ever saw kept at one place, was 600—at Wewahitchka, Fla. The owner of this large apiary said that he had too many in one place. The bee-pasture there was the best I ever saw.

G. W. Demaree—The description you give of your honey sources is all one could well imagine, except 100 acres of white clover is not large. In my opinion, you can handle from 200 to 300 colonies in a locality like the one you describe.

J. A. Green—You would probably make it pay with any number up to 400, but to give the best returns from labor and outlay, you would not want over 150. Yours seems to be an exceptionally good locality. Ordinarily I should not advise over 75 in one place.

R. L. Taylor—That depends upon the character of the season. In a very poor year for nectar 5 colonies might fail to pay, and in an excellent year 500 colonies might pay better than any less number. In ordinary seasons 500 might pay, but 300 might pay better. At a venture, I should "guess" 250 to 300 would be best, on the whole.

Wm. M. Barnum—It depends entirely upon how much time you can devote to their care. The number of bees in the neighborhood, will also have some influence. You have drawn a very flowery picture, however; and were it one-half true, I would not be afraid to handle 200 colonies, divided into two or three apiaries. One man can just about care for 100 colonies, excepting possibly during swarming time, when the good wife can probably help him through. By careful management, the two might care for the 200 colonies.

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Heber, Utah, Oct. 9, 1894.

J. A. SMITH.

Now, didn't I tell you it would pay to ship Bees north to build up and catch the honey-flow? **Bees by the Pound**, on a Comb and Honey to last the trip—\$1.00; 10 or more Pounds 90c. per pound. **NUCLEI**—\$1.00 per Frame; 10 or more Frames, 90c. each. Untested Queens to go with them [same as Mr. Smith got] 75c. each.

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Doctor's Hints

By **DR. PEIRO, Chicago, Ill.**

Test for Mushrooms.

Mushrooms having a red or pink covering are invariably poisonous. The test for the edible variety is the boiling of an onion with them. If the onion turns green, the m's are bad.

Consumption Contagious.

Yes, consumption is contagious as well as heritable. Constant attendance on a consumptive may develop the disease in otherwise healthy persons. The well and the diseased should never sleep in the same room, certainly not in the same bed.

Influence of Edibles.

Pie-plant acts especially upon the liver and bowels, asparagus on the kidneys, onions on the membrane of the lungs, lettuce on the nervous system, and melons are refreshing to the stomach.

Flowering Plants in the Home.

Flowering plants are not only things of beauty, admired by all invalids, but are beneficial in living and sleeping rooms. They absorb carbon from the air and in return exhale oxygen—just what we need.

Harmful to the Eyes.

A certain very foolish fad just now prevails among society ladies, of applying a liquid lotion to the eyes to make them appear sparkling and fascinating at evening receptions. Oculists reap a handsome harvest as the result of this vanity.

Spank-Cure for the Drowned.

Spank-cure is the thing for boys who are supposed to be drowned. When taken out of water, they should be rolled over a barrel to force the water out of their stomach and lungs, and spanked good and hard. If the skin gets red, he'll soon be all right.

Madstone a Humbug.

Big humbug! There is absolutely no virtue in a "madstone." Don't go and pay your money to the "fake" that claims to have one. The grindstone, in your woodshed, is just as effective!

Fish and Brains.

It is an old fable, that to eat fish makes brain. U-m! Why is it that fish is so plenty and brains so scarce?

Cracked Wheat and Oats.

There is no better food for breakfast than a good, big dish of cracked wheat or oats. They contain the phosphorous and other properties the system greatly needs.

Don't Eat Nuts at Night.

Nuts, too, are very nutritious, but should not be eaten at night, unless you desire a visit from ghosts and goblins in your dreams.

Dye in Red Stockings.

Yes, the wearing of red stockings, by children in particular, has often resulted in serious consequences, occasioning painful eruptions, blood-poisoning and severe ulcerations, due to the dye used in coloring.

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General Items.

There, There!

Now, boys, stop that quarreling at once. The idea, that the names of a few weeds should make either of you so spunky! When you can't settle things, call on your old dad to decide matters.

You are perfectly correct in your statement, Charles, that *Eupatorium perfoliatum* is boneset; while you, Emerson, are equally justified in the matter of hoarhound; *Marubium vulgare* is right.

But I do hope I won't again have to remind either of you that another display of your young tempers will be the occasion for inviting you both out into the woodshed, to beat a tattoo with the well-seasoned shingle!

M. DEA.

Nice Winter for Bees, Etc.

We have had a very nice winter so far. The weather was so warm that some of my bees were out flying around to-day.

I am very much pleased with Editor York's taste, and style of the "new suit of clothes" he donned the Bee Journal with, and I hope that it will continue to be a weekly visitor to my house as long as I or it lives, because I intend to keep bees all the rest of my life, unless, as the Irishman would say, "They sting me to death."

J. C. KNOLL.

Glenwood Park, Neb., Jan. 6.

Commendable Stick-to-it-iveness.

We have had two very poor years for honey in this part of the country. One year ago last summer I had one swarm from 7 colonies, spring count, and about 50 pounds of comb honey. Last summer I did not have a single swarm, and obtained less than 50 pounds of comb honey. Most of my neighbor bee-keepers are very much discouraged. I hope for a better season the coming summer. I have not sold honey enough in the last two years to pay for the American Bee Journal, but I hardly know how to get along without it.

JOHN KERR.

Cedar Falls, Iowa, Jan. 9.

Preventing Brace and Burr Combs.

The trouble of brace and burr combs between top-bars and supers can be effectually and easily prevented thus:

Take 3 or 4 strips of tin about 3 inches and width of the hive, and lay them 1 to 1½ inches apart across the frames, and the thing is done. This will reduce the linear space between any two frames by about ¾. The remaining ¾ divided into 3, 4 or 5 equidistant openings of 1 inch, more or less, is abundant. Success by this method has fully convinced me that those 10 or more long passageways are the real cause of the trouble.

JAY HAWK.

Holton, Kans.

Another Wisconsin Boy Bee-Keeper.

I am so glad to see in the Bee Journal that the editor does not believe in the old saying, "Boys should be seen and not heard," and therefore I venture to give my experience in the bee-business.

I commenced two years ago with one colony, which gave me 100 pounds of fine honey. I now have 3 colonies in the cellar, in good condition. I sold 2 swarms last summer, also some honey, besides I have a milk-can full of just as nice white granulated honey as you can wish for. I whitened a little paddle which I lay on the top of it, and whenever I feel like taking "a chew," I am at liberty to do so. It is bee-keeping for pleasure at present.

I should think if the boys and girls only knew how sweet and nice honey-candy is, they would keep bees.

Pa has taken the American Bee Journal

for years. I like to read it, and expect pleasure will turn into business some day.

Pa likes the bee-business very much. By helping him, and reading the Bee Journal, I can learn how to take care of them myself. I hope the Wisconsin boys will try the paddle, and see how nice it works.

Long live the editor that gives the boys and girls a chance!
BEN F. SMITH.
Plum City, Wis.

Lots of Rain in the Mountains.

We had lots of rain in the mountains here, and expect a good honey-flow this year. Most of the bees died from starvation.

C. SCHLIESMAYER.

Neenach, Calif., Jan. 4.

Splendid for a Poor Year.

How is this for a poor year? We had 70 colonies, spring count, in 1894, and increased to 106. We run 76 colonies for extracted honey, and took 9,880 pounds from them. From the other 30 colonies we took 1,440 pounds of comb honey.

Fresno, Calif.

JACKSON & RAINS.

Bothered with Warping Covers.

As I have heard so much said about flat covers warping in the hot sun, and I have been bothered so for several years, last year I went to the blacksmith shop and got some old wagon tire, which I cut into lengths 14 inches long, bent this shape, I punched holes in them, 4 in number, and dressed the edges down to ¼ inch, so as to turn the water off. I put one on each end, with four screws in each. None have warped any yet.

L. B. WHITNEY.

Covington, Pa.

Wax Spots—Wax Evaporating.

If not too late, I will give my way to remove wax from clothing.

Hold the garment with the wax spots on, near a steam jet—the spout of a teakettle will do—and the "spots" will disappear as if by magic.

Has it ever occurred to any of the readers of the American Bee Journal, that when you render wax in an open vessel a large per cent. evaporates—a very large per cent.?

Tacoma, Wash.

CHAS. SWINDELLS.

Report for 1894—Honey-Thieves.

From 75 colonies, spring count, in 1894, I got 4,000 pounds of nice extracted honey. At the end of the season I had 107 colonies in good condition, and all were wintering nicely until Jan. 5, when thieves entered my apiary and ransacked 8 colonies, and took out 39 combs of honey. The heaviest combs were taken, bees shaken off, and the hives covered again. The thieves understood their business well. I patched up 3 colonies, but 5 are gone entirely. No clew to the thieves as yet.

B. W. HAYCK.

Quincy, Ill., Jan. 12.

The Prospects in California.

The old year has passed away, even in California, and with it many expectations and disappointments; and now the new year has put in its appearance, and with it new hopes and anticipations have sprung up; even the "Old Reliable" has taken on a new form, and changed so much in appearance and general make-up that at first sight I came very near taking it for an intruder or stranger, but some of the "old land marks" soon gave the necessary prelude, and I soon sailed into its contents. The first page is exactly to the idea that came to my mind some time ago, while looking over the old numbers with a view of putting them into book form—the front covers were especially in my way; in the new number the objection is done away with, making it look very neat, too.

The prospects for the coming season are

somewhat better than they were last year about this time, so far as the weather is concerned, for we have had more rain already up to date than we had the whole of the last year; but rain alone cannot do us much good—we must also have plenty of sunshine, and, besides the above, we need the busy little workers to bring in the "sweet stuff," or else it will do us no good, and it seems they are greatly missing in quantity, for I hear from all quarters (of this section) that a great many colonies have either died out entirely, or else they are so reduced in quantity that it will take them a long time to build up in the spring. One of our oldest bee-keepers told me the other day that he finds numbers of his hives that have less than a quart of bees in them, and most of them are short of honey, and the bee-keepers almost too poor to buy food and raiment for themselves and their families. Tough indeed, but what can't be cured will have to be endured, yet we feel courageous enough to go ahead; we do not feel lonesome, for we are a great company, according to the reports of the fraternity in the American Bee Journal.

H. F. JOHANNING.

Et'wanda, Calif., Jan. 9.

Alfalfa to be Sown in Nebraska.

I would like to see some reports from bee-keepers in Nebraska. Mine for 1894 is as follows:

I increased from 24 colonies to 33, and fed 200 pounds of sugar for winter. I don't know of any one near here who got any surplus honey. There will be considerable alfalfa sown here next spring, and we hope for better honey-crops in the future.

A. W. SMITH.

Shelton, Nebr., Jan. 14.

The Future and Past Season.

All the main honey-plants are now up, and looking fine. If our spring is favorable. I think we will have a good honey crop. We have had a very long cold spell; my bees were without a flight for 13 days, which is the longest they have been so since I kept bees in Texas. I run 28 colonies, spring count, last season, and increased to 40, and secured \$50 worth of honey. The price here was from 15 to 20 cents for good honey. I produce mostly comb honey in one-pound sections, as I find better sale and a better price for it. I secured a full 100 pounds of honey-dew, which I will not describe, as I think Dr. Wm. R. Howard sent the editor a sample of it.

I am very much pleased with the American Bee Journal, and wish it much success. Hurrah for "The Sunny Southland!"

LEONARD COWELL.

Fort Worth, Tex., Jan. 8.

Several Items from Tennessee.

I had one colony last summer whose queen failed to become fertilized. Not knowing the condition of the queen, the colony became weak, and starved out. On examination I found the combs full of young drone-brood. These drones were the size of worker-bees, except drone shape.

Our zero weather has broken up, the thermometer registering 60 degrees to-day. The bees had a good flight, and seemed to enjoy the warm sun very much. My bees are wintering better than usual. I packed with chaff and hay pads. I think the packing is a great benefit to the bees in some winters here, and in some it isn't. I find the chaff to be the best absorbent.

I have colonies that allowed some of their drones to go into winter quarters. This isn't a common thing in this part of the country. I think the reason they took them into winter quarters was due to the amount of honey they had. The colonies are a little ahead of any that I ever saw in stores. They are 8 and 9 frame hives, the frames are 15 inches long, inside, and 10 inches deep.

I believe that a deep frame is the best for all purposes in the brood-nest. I don't

think that there is a bee-keeper anywhere but will agree with me on deep frames for the best. Bees cluster at the bottom of the the frames in the fall, and work their way to the top by spring. If the frames are shallow, they get to the top during a cold spell, when they can't retreat, and cluster again in a new place, and starve, to a great extent.

Well, I didn't know the "Old Reliable" last-Friday morning, when the post-office clerk handed it to me. Thinks I to myself, "This is a sample copy of a new bee-paper." I tore off the wrapper, and there it was, the same old American Bee Journal in new style, with its broad face, and new dress on. It didn't look natural. I would read it if it was in newspaper form. Much obliged to you, Mr. York, for your new get up. And I wish the "Old Reliable" much success.

I want to ask Mrs. Atchley, through the Bee Journal, what kind of timber there is in Bee county, and surrounding counties.

A. C. BABB.

Greenville, Tenn., Jan. 7.

Fears the Bees Won't Winter Well.

I see the Bee Journal has come out with a broad face for 1895. All right, I am satisfied with it. It is well worth twice the money it costs, to any one having a few colonies of bees.

I put out 45 colonies last spring; and it was cold and wet, and they dwindled away to 30, and some weak ones among them, too. I got about 1,200 pounds of comb honey, and increased to 52 colonies. They are in the cellar, and some have commenced to spot their hives already. They gathered a lot of poor honey late fall, which I think causes it. I don't think they will winter well.

I wish the Bee Journal success, and recommend it to all who keep even one colony of bees.

GEO. H. AURINGER.

Bonniwell's Mills, Minn., Jan. 9.

The 5-Banded or Golden Italians.

I commenced two years ago with 3 colonies, and we have had what bee-men call bad years. I have had considerable honey for home use. I sold one colony, and lost one swarm by its going off. I carried into the cellar, Dec. 1, 14 colonies in the best condition for winter I have ever had. All were strong, and their hives full of honey. I am a pupil of Mr. J. C. Balch. My first bees were black, and I got some queens and introduced them, and of course some of them proved to be more yellow than others, but the colony that was the deepest, and whose drones were better marked than any in the yard, was the very best I had. Her bees gathered more honey, and the queen was more prolific than any I had. They seemed to be cross, but I don't find fault with them for that, as long as they are rustlers.

I have been reading the articles on the 5-banded and golden Italians. Last fall I sent to West Virginia and got a warranted queen; I introduced her about Sept. 1, during the fall honey-flow, and I must say she is a dandy—almost all yellow; and when I carried the bees in for winter, nearly all the bees in her hive were of her kind, and a fine lot as to color, but they came too late to test their industry before next spring. But since reading the comments in the papers recently on the golden queens, I thought I would ask those commentators whether they would advise me to kill that queen and colony before spring, as I don't want to keep them if they are as bad as some make them. If the yellow bees are better than the black, does it not follow that the purer the better? And does not the most of the fault come from the way they are reared by our queen-breeders, and the artificial methods they use that produce dwarfed bees, that have no vitality, and, in fact, there is nothing left but the color? I think so.

W. J. PRICE.

Elsmore, Kans., Jan. 14.



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J. FORNCROOK,

WATERTOWN, Jeff. Co., Wis., Jan. 1st, 1894.

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This Veil we club with the Bee Journal for one year—both for \$1.75; or give free as a Premium for sending us 3 New Subscribers to the Bee Journal at \$1.00 each.

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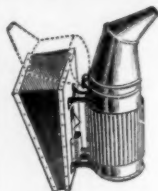
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